

Cutting and Scoring Rules

For centuries steel has played an essential part in our life, a cultural heritage closely linked with the iron ore region where our production site is located.

The career of the Böhler brothers began more than 100 years ago in Ybbstal, Lower Austria. Their knowledge of engineering, coupled with traditional steel making, was the driving force behind a global success story.

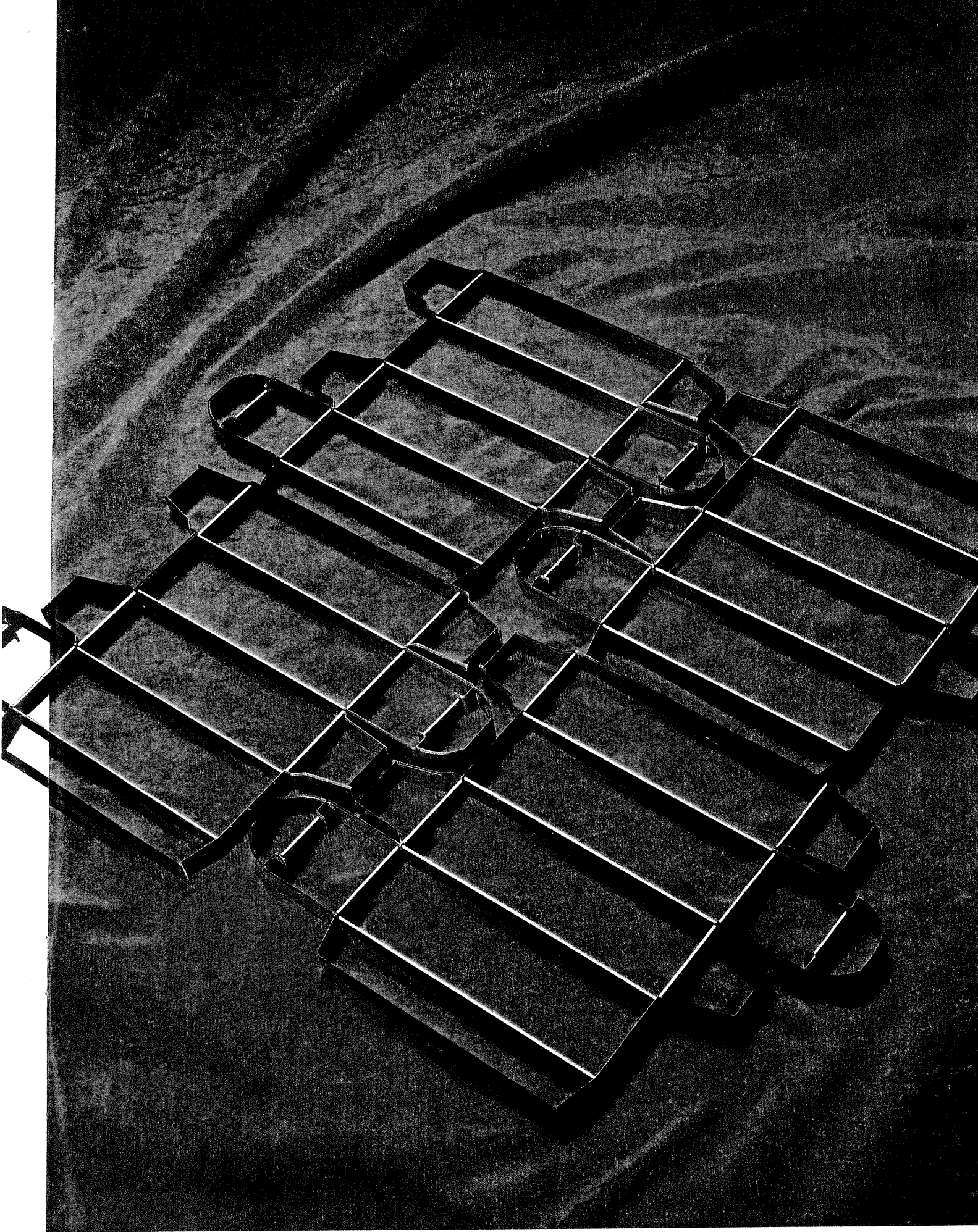
Today, steel is still the function of BÖHLER YBBSTAL Band GmbH & Co KG and the proverbial Böhler quality ensures customer satisfaction. Our efforts to obtain the highest possible quality are reflected in the Quality Assurance System certified in accordance with BS EN ISO 9001 standard. The key areas in our company's activities include the aim to find solutions to specific customer problems, together with in-depth specialisation.

We will continue to concentrate our activities on ensuring that our products are of highest quality, offering distinct advantages and thereby meeting the ever increasing requirements of our customers.

Quality • Innovation • Customer Care



BS EN ISO 9001




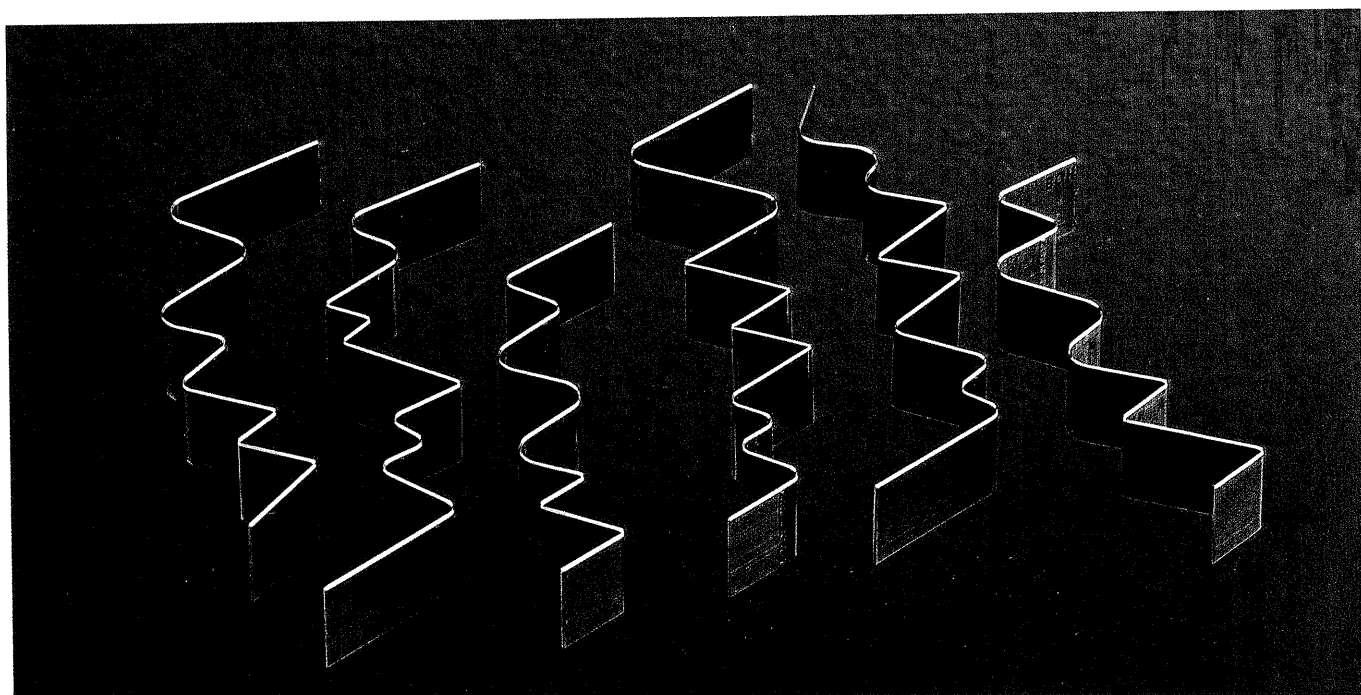
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C) Hardness Values and Bending Properties:

				Guaranteed Bending Properties				
Brand	Hardness		Edge-finish	Bending Angle	Bending Radius R [mm]			
	Body	Edge						
BÖHLER TOP	~ 450 HV (45 HRC)		S	$\alpha = 85^\circ$	0,3	0,4	0,6	1,1
BÖHLER H 75	~ 525 HV (51 HRC)		S	$\alpha = 90^\circ$		1,7	3,5	6,5
BÖHLER UNIVERSAL	~ 340 HV (34 HRC)	~ 640 HV (57 HRC)	S	$\alpha = 85^\circ$	0,3	0,3	0,4	0,7
			G		0,3	0,4	0,9	1,1
BÖHLER UNIVERSAL 60	~ 450 HV (45 HRC)	~ 640 HV (57 HRC)	S	$\alpha = 85^\circ$	0,3	0,4	0,6	1,1
			G		0,5	0,5	0,6	1,1
BÖHLER UNIVERSAL 75	~ 525 HV (51 HRC)	~ 640 HV (57 HRC)	S	$\alpha = 90^\circ$		1,7	3,5	6,5
			G			1,7	3,5	6,5
			S = shaved G = ground		1,5 pt 0,53 mm	2 pt 0,71 mm	3 pt 1,05 mm	4 pt 1,42 mm



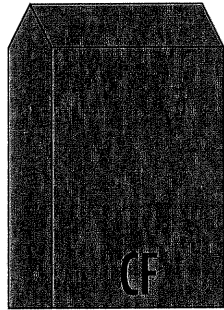


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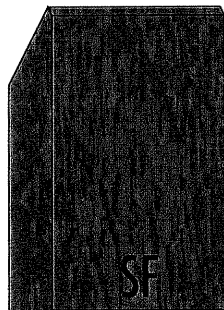
D) Types of Cutting Edge:

In order to meet the various cutting applications, we have included all required types of cutting edges in our production programme.



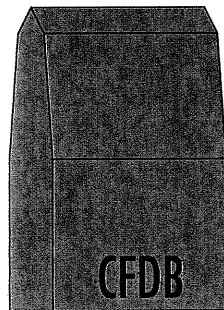
CF - Centre Face (Double Bevel)

This is the most commonly used cutting edge for all standard cardboard. Approximately 80-85% of all cutting rules used have this bevel.



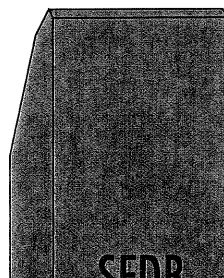
SF - Side Face (Single Bevel)

This type of cutting edge is particularly suitable for cutting gaskets, displays and close shapes. The minimum counter bevel facilitates a right angled, straight cut.



**CFDB - Centre Face Double Bevel
(Double Long Bevel)**

This type of cutting edge reduces the cutting power required when cutting hard and/or thick materials, such as glass fibre reinforced laminates, leather, cork, rubber, jigsaw puzzles, corrugated board, plastics, plywood, etc.



**SFDB - Side Face Double Bevel
(Long Single Bevel)**

The SFDB profile offers the same advantages as the CFDB when cutting thicker material. SFDB has the added advantage that the material being cut is left with a square 90° cut edge and all the distortion from penetration is left on

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E) Cutting Edge Finish:

Shaved (drawn) cutting edge:

The standard condition of BÖHLER cutting rules is a precision drawn, high surface quality cutting edge.

The cutting rule has a smooth surface with a sharp cutting edge, which minimizes the formation of dust during application and ensures an easy penetration into the material being cut.

Sharpened (finely ground) cutting edge:

For the efficient cutting of plastics, rubber, laminates and coated materials, a ground cutting edge has proved the best.

We recommend for this application our induction hardened cutting rules (UNI, UNI 60 and UNI 75) in the ground edge finish.

Bendability, compared to rules with a drawn cutting edge, is reduced slightly.

SUPREME - coated cutting edge:

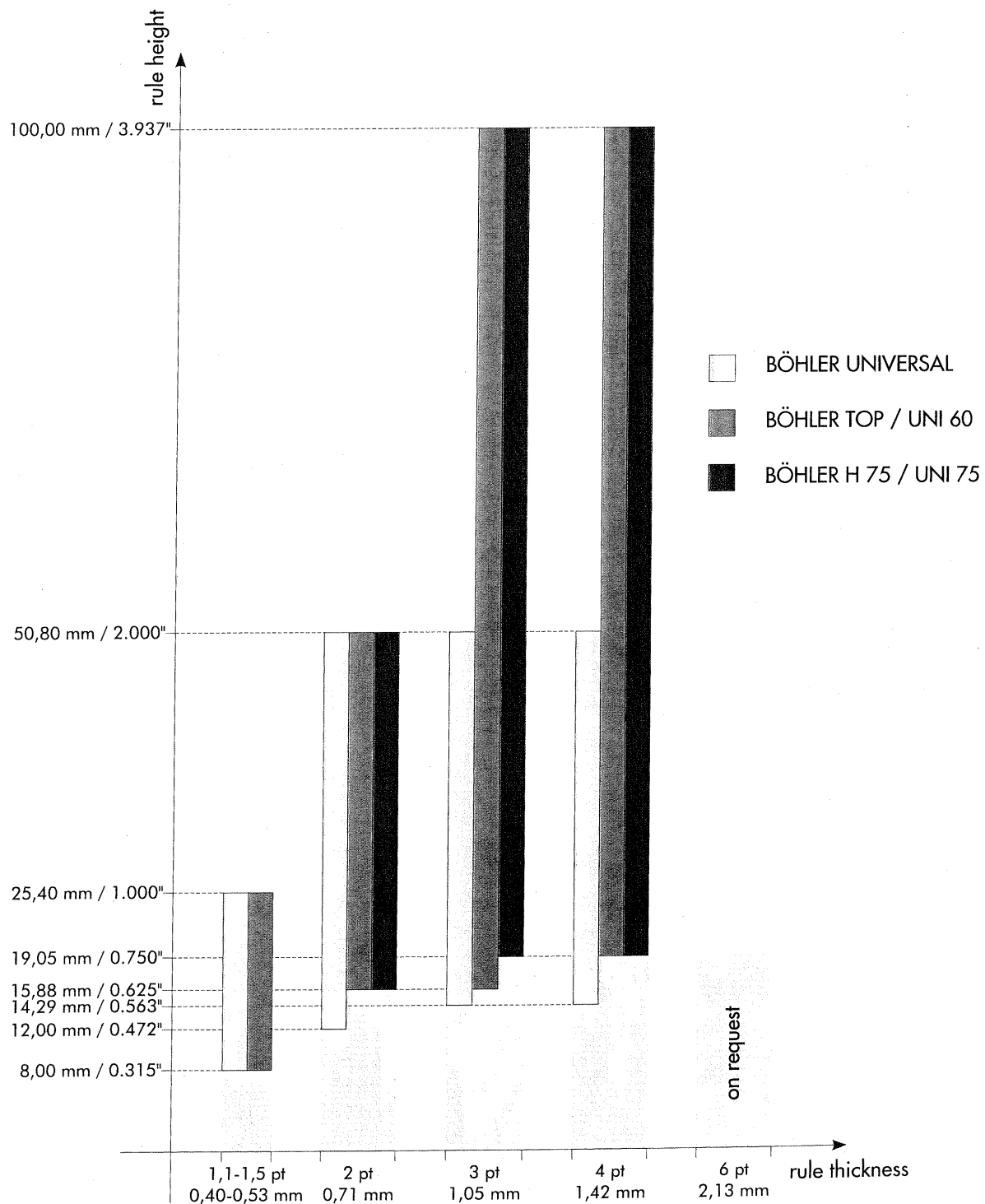
All cutting rules with a drawn and ground cutting edge can be specially coated to give the following advantages:

- dust-reduced cutting
- particularly suitable for recycled cardboard
- reduction in cutting force required
- reduction in friction between the cutting edge and the material being cut
- substantially increased service life of the die

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F) Range of Dimensions:



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G) Tolerances of Dimensions:

Thickness Tolerance:

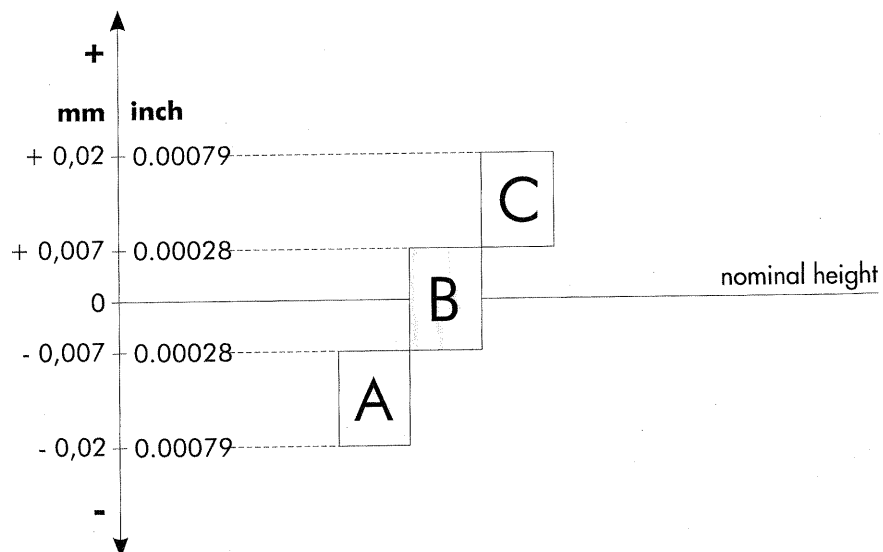
Rule Thickness s			Thickness Tolerance	
[pt]	[mm]	[inches]	[mm]	[inches]
1,1	0,40	0.016"	± 0,015	± 0.0006"
1,3	0,45	0.018"	± 0,015	± 0.0006"
1,4	0,50	0.020"	± 0,015	± 0.0006"
1,5	0,53	0.021"	± 0,015	± 0.0006"
2	0,71	0.028"	± 0,015	± 0.0006"
3	1,05	0.041"	± 0,020	± 0.0008"
4	1,42	0.056"	± 0,020	± 0.0008"
6	2,13	0.084"	± 0,025	± 0.0010"

Height Tolerance:

Rule Height h		Height Tolerance		classified
[mm]	[inches]	[mm]	[inches]	
8,00 - 25,40	0.315" - 1.000"	± 0,020	± 0.0008"	A / B / C
> 25,40 - 50,80	> 1.000" - 2.000"	± 0,025	± 0.0010"	—
> 50,80 - 76,20	> 2.000" - 3.000"	± 0,030	± 0.0012"	—
> 76,20 - 100,00	> 3.000" - 3.937"	± 0,035	± 0.0014"	—

Classification:

The height classification is only done when the rules are manufactured in cut lengths up to 1000 mm.



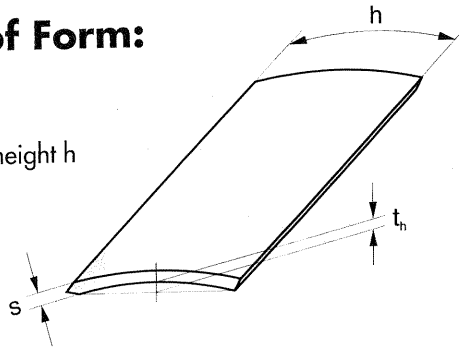
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H) Tolerances of Form:

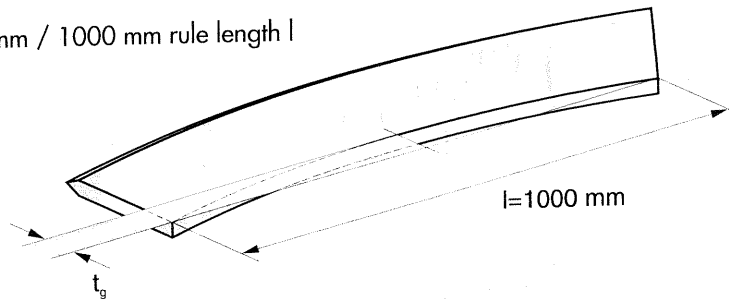
Cross Camber:

$t_h = \text{max. } 1 \mu\text{m} / \text{mm rule height } h$



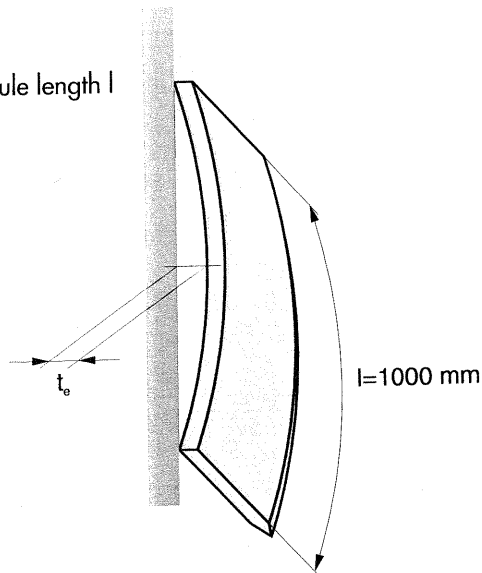
Straightness:

$t_g = \text{max. } 0,5 \text{ mm} / 1000 \text{ mm rule length } l$



Flatness:

$t_e = \text{max. } 5 \text{ mm} / 1000 \text{ mm rule length } l$





THE EUROPEAN NETWORK FOR QUALITY SYSTEM ASSESSMENT AND CERTIFICATION

This is to state that
BÖHLER-YBBSTAL BAND GmbH & CO KG
 DIVISION OF BÖHLER-UDDEHOLM AG
 ROTTE WÜHR
 Waidhofnerstrasse 3
 A-3333 BÖHLERWERK
 AUSTRIA

holds the Quality System Certificate

FM 34461
 BS EN ISO 9001: 1994

for the standard from the
BS EN ISO 9000
series, and the scope as specified therein


Signed for and on behalf of EQNet member



DATE: 26 July 1996
 NUMBER: E1033596

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